ANEMONE KILLING MIXTURE AND METHOD FOR AQUARIUMS

Description

Background of the Invention

Field of the Invention

The present invention relates to aquarium maintenance and in particular to an anemone killing mixture and method for use in reef aquariums.

Description of the Prior Art

Anemones are a nuisance and dangerous to corals that hobbyists care for in reef aquariums. Aiptasia and Majana anemones pack a powerful sting that can irritate or kill desirable corals and clams in the tank. Aiptasia are small light brown anemones of the species A. pallida and A. pulchella. The anemones are typically less than 1.5" long and frequently much smaller. Aiptasia are photosynthetic, but will eat things that are small enough for them to catch. The stalk is attached to a hard substrate, usually in a crevice, which allows the anemone to quickly withdraw into the hole when danger approaches. Aiptasia reproduce quickly through the process known as pedal laceration which occurs when baby anemones develop from small bits of tissue left behind as the anemone wanders around. Aiptasia have amazing powers of regeneration so cutting, grinding or smashing of the anemones may serve more to propagate the animals that to kill them.

Prior art patents disclose methods for the extermination of algae and macroinvertabrates. The term "macroinvertebrates" is defined to include but is not limited to mollusks such as clams, mussels, oysters, and snails; crustaceans such as barnacles; sponges, hydrozoans; sea anemones; bryozoans; annelids; and tunicates. None of the

prior art patents list direct application of a mixture for elimination of individual unwanted anemones.

Prior art U.S. Patent #6,315,910, issued 11/13/2001 to Farmerie, provides a method for controlling snails in aqueous systems which involves treating aqueous systems which contain snails or which are prone to snail infestation with an effective amount of a water-soluble dialkyl diallyl quaternary ammonium polymer (polyquat).

Prior art U.S. Patent #5,900,157, issued 5/4/1999 to Petrille, shows methods for controlling the fouling potential of macroinvertebrates. An effective controlling amount of a polymer that comprises a tannin and a cationic monomer is added to an aqueous system suffering from the fouling potential of macroinvertebrates. The term "macroinvertebrates" is defined to include but is not limited to mollusks such as clams, mussels, oysters, and snails; crustaceans such as barnacles; sponges, hydrozoans; sea anemones; bryozoans; annelids; and tunicates.

Prior art U.S. Patent #4,857,209, issued 8/15/1989 to Lyons, claims a method of controlling the fouling potential of macroinvertebrates, such as mollusks, in aqueous systems which comprises adding to the system an effective controlling amount of a water-soluble quaternary ammonium salt.

Prior art U.S. Patent #4,816,163, issued 3/28/1989 to Lyons, describes a method of controlling the fouling potential of macroinvertebrates, such as mollusks, in aqueous systems which comprises adding to the system an effective controlling amount of a water-soluble alkyl guanidine salt wherein the alkyl group has from about 8 to about 18 carbons.

Prior art U.S. Patent #4,906,385, issued 3/6/1990 to Lyons, discloses a method of controlling the fouling potential of macroinvertebrates, such as mollusks, in aqueous systems. The method comprises adding to the system an effective controlling amount of a water-soluble alkyl guanidine salt wherein the alkyl group has from about 8 to about 18 carbons.

Prior art U.S. Patent #5,468,739, issued 11/21/1995 to Whitekettle, indicates methods for controlling the fouling potential of Asiatic clams in aqueous systems are. The methods comprise adding to the aqueous system an effective controlling amount of a tetraalkyl phosphonium salt compound. The preferred compound is tri-butyltetradecyl phosphonium chloride.

Prior art U.S. Patent #4,328,638, issued 5/11/1982 to Smithson, puts forth a method of eliminating mussels and the like from an underwater bed. Mussels and related bottom dwelling creatures may be eliminated from an underwater bed by applying to the zone of at least the bottom 2 feet of water above the bed water-soluble sulfite salt such as sodium metabisulfite to substantially deplete dissolved oxygen in the zone. Thereafter, hydrogen sulfide may be directly added to the zone, being stabilized by the absence of oxygen therein to enhance the mussel kill. Thereafter, as fresh water is added to the zone, the hydrogen sulfide and residual sulfites are oxidized to relatively harmless sulfates.

Prior art U.S. Patent #4,505,734, issued 3/19/1985 to Freedenthal, concerns basic copper salts such as cupric hydroxide, basic copper chloride, basic copper sulfate and the like with an alkanolamine result in an unexpectedly beneficial composition useful in a

method for treating bodies of water to arrest or eliminate the growth of algae and aquatic weeds.

Prior art U.S. Patent #3,634,061, issued 1/11/1972 to Geiger, illustrates the application of a herbicidally effective of a substantially insoluble copper-containing compound to areas of water infested with undesirable aquatic plants. The compound comes into contact with the plants and is held thereby, destroys said plants with minimal pollution and toxicity to other forms of aquatic life.

Prior art U.S. Patent #3,905,797, issued 9/16/1975 to Kunkel, is for an algaecide and herbicide composition for use in controlling the growth of algae and aquatic and terrestrial plants.

What is needed is an anemone killing mixture and method for use in reef aquariums, which works instantly and has no adverse affect on the coral or other inhabitants of the aquarium.

Summary of the Invention

An object of the present invention is to provide an anemone killing mixture and method for use in reef aquariums, which works instantly and has no adverse affect on the coral or other inhabitants of the aquarium.

Another object of the present invention is to provide an anemone killing mixture that is made from food grade calcium hydroxide, non-iodized sodium chloride salt, and reverse-osmosis water, which are all common and easily accessible.

One more object of the present invention is to provide a simple anemone killing method, which uses a syringe to apply the mixture directly to an anemone.

In brief, the present mixture is to be fed to Aiptasia and Majana anemones in reef aquariums. These anemones are a nuisance and dangerous to corals that hobbyists actual care for in their aquariums. Within a few seconds of contact of this product the problem anemone dies. The introduction of the product into the aquarium has proven inert to other inhabitants making the product "reef" safe.

The anemone killing mixture of the present invention comprises the following ingredients combined by using the following method:

Ingredients of the anemone killing mixture:

1) 1/2 dry cup Food Grade Calcium Hydroxide, which could be pickling lime.
2) 1/4 dry cup non-iodized salt*.
3) 1 liquid cup reverse-osmosis water.

*The non-iodized salt may be non-iodized sodium chloride or it may be sea salt having a composition comprising Magnesium Chloride ($MgCl_2$) (31.0 - 35.0%, preferably 33.3%), Potassium Chloride (KCl) (20.0 - 28.0%, preferably 24.3%), Sodium Chloride (NaCl) (3.0 - 8.0%, preferably 5.5%), Calcium Chloride ($CaCl_2$) (0.1 - 0.5%, preferably 0.2%), Bromide (Br^-) (0.3 - 0.6%, preferably 0.5%), Sulphates (SO_4) (0.05 - 0.2%, preferably 0.15%), Insolubles (0 - 0.3%, preferably 0.03%), and Water of Crystallization (32.0 - 40.0%, preferably 36.4%).

Method of making the anemone killing mixture:

1) Dissolve the calcium hydroxide in reverse-osmosis water.
2) Add the salt and stir.
3) Heat all the ingredients in a microwave for 40 seconds to boil.

Alternate method of making the anemone killing mixture:

1) Mix the salt with the water first. Adding extra salt to the water will form a fully saturated salt water solution.
2) Pour off the salt water into the food grade calcium hydroxide. Any remaining salt that didn't dissolve can be used for the next batch or discarded. This makes the solution even smoother.
3) Heat all the ingredients in a microwave for 40 seconds to boil.

The method of applying the anemone killing mixture for the two different types of anemones comprises:

For Aiptasia -

1) Fill a syringe (used B&D 5 ML) with the anemone killing mixture.
2) Place the tip of the filled syringe near the mouth of the Aiptasia,
3) Feed the Aiptasia a small amount. It will ingest the anemone killing mixture and die.

For Majana -

1) Fill a syringe (used B&D 5 ML) with the anemone killing mixture.
2) Place the tip of the filled syringe near bubble tips of the Majana.
3) Spread product over the Majana. It will ingest the anemone killing mixture and die.

An advantage of the present invention is that it is inert to other inhabitants of the reef aquarium.

Another advantage of the present invention is that it is made from common and easily accessible ingredients.

An additional advantage of the present invention is that it is inexpensive to make.

One more advantage of the present invention is that it is easy to apply.

Yet another advantage of the present invention is that it kills the anemone within a few seconds of contact.

Best Mode for Carrying Out the Invention

An anemone killing mixture for reef aquariums that comprises:

1/2 dry cup of food grade calcium hydroxide, which could be pickling lime;

1/4 dry cup non-iodized salt*; and

1 liquid cup reverse-osmosis water.

* The non-iodized salt may be non-iodized sodium chloride or it may be sea salt having a composition comprising Magnesium Chloride ($MgCl_2$) (31.0 - 35.0%, preferably 33.3%), Potassium Chloride (KCl) (20.0 - 28.0%, preferably 24.3%), Sodium Chloride (NaCl) (3.0 - 8.0%, preferably 5.5%), Calcium Chloride ($CaCl_2$) (0.1 - 0.5%, preferably 0.2%), Bromide (Br^-) (0.3 - 0.6%, preferably 0.5%), Sulphates (SO_4) (0.05 - 0.2%, preferably 0.15%), Insolubles (0 - 0.3%, preferably 0.03%), and Water of Crystallization (32.0 - 40.0%, preferably 36.4%).

The anemone killing mixture for reef aquariums is boiled for 40 seconds in a microwave oven. Additional salt can be added to create a supersaturated solution.

In practice, making the anemone killing mixture for reef aquariums comprises a first step of dissolving 1/2 dry cup of food grade calcium hydroxide in 1 liquid cup of reverse-

osmosis water. The second step is to add 1/4 dry cup non-iodized salt and stirring to complete the mixture. The third step is to heat all ingredients in a microwave for 40 seconds to boil the mixture.

An alternate method of making the anemone killing mixture comprises a first step of mixing 1/4 dry cup non-iodized salt with 1 liquid cup of reverse-osmosis water and a second step of adding extra salt to the water to form a fully saturated salt water solution. The third step is to pour off the salt water solution into 1/2 dry cup of food grade calcium hydroxide. Any remaining salt that didn't dissolve may be discarded or used to make another mixture. The fourth step is to heat the mixture in a microwave oven for 40 seconds to boil.

In practice, the method of applying an anemone killing mixture to Aiptasia anemones includes a first step of filling a syringe (used B&D 5 ML) with the boiled anemone killing mixture, which comprises 1/2 dry cup of food grade calcium hydroxide, 1/4 dry cup of non-iodized salt, and 1 liquid cup of reverse-osmosis water. The method of applying the anemone killing mixture to Aiptasia anemones also includes a second step of placing a tip of the filled syringe near a mouth of an Aiptasia anemone. The third step is to feed the Aiptasia a small amount of the mixture to kill it.

In practice, the method of applying an anemone killing mixture to Majana anemones includes a first step of filling a syringe (used B&D 5 ML) with the boiled anemone killing mixture, which comprises 1/2 dry cup of food grade calcium hydroxide, 1/4 dry cup of non-iodized salt, and 1 liquid cup of reverse-osmosis water. The method of applying the anemone killing mixture to Majana anemones also includes a second step of

lacing the tip of the filled syringe near a portion of the bubble tips of the Majana anemone. The third step is to spread the mixture over the Majana anemone to kill it.

It is understood that the preceding description is given merely by way of illustration and not in limitation of the invention and that various modifications may be made thereto without departing from the spirit of the invention as claimed.